AMENDMENTS TO THE CLAIMS

Please amend the claims as detailed below

1. (currently amended) An apparatus comprising:

a heat source with at least one integrated circuit;

a heat exchanger; and

a thermal management device having a case including a microporous medium and a fluid, to thermally couple the heat source to the heat exchanger.

2. (original) The apparatus of claim 1, wherein the fluid is a selected one of air, water, and perfluorinated liquid.

3. (original) The apparatus of claim 1, wherein the case comprises at least a selected one of copper and aluminum.

4. (currently amended) The apparatus of claim 1, wherein the microporous medium includes a microporous metal foam.

5. (original) The apparatus of claim 4, wherein the microporous metal foam includes at least a selected one of copper, aluminum, and carbon.

6. (currently amended) The apparatus of claim 1[[4]], wherein the microporous ~~metal foam~~ medium includes a plurality of pore channels with a pore diameter that is substantially at or between 50 μm – 1 mm.

7. (currently amended) The apparatus of claim 6, wherein the microporous ~~metal foam~~ medium includes a plurality of areas with different pore diameters.

8. (currently amended) The apparatus of claim 1[[4]], wherein the microporous ~~metal foam~~medium includes a porosity that is substantially at or above 80%.

9. (currently amended) The apparatus of claim 1, wherein the case includes:
an inlet coupled to a pump;
an outlet coupled to the heat exchanger; and
the pump to at least assist to produce a fluid motion through the microporous medium toward the heat exchanger.

10. (original) The apparatus of claim 9, wherein the heat source further comprises
a die including the at least one integrated circuit; and
a substrate coupled to the die to form a package.

11. (currently amended) The apparatus of claim 10, wherein the case substantially encloses the microporous medium.

12. (currently amended) The apparatus of claim 11, wherein the microporous medium is coupled to at least one interior wall of the case with a thermal interface material.

13. (original) The apparatus of claim 11, wherein the case is coupled to the die with a thermal interface material.

14. (original) The apparatus of claim 11, further comprising
a heat spreader coupled to the substrate over the die, and the case is coupled to the heat spreader with a thermal interface material.

15. (currently amended) The apparatus of claim 10, wherein the microporous medium is coupled to the die, and the case is adapted to receive the microporous medium in a cavity.

16. (original) The apparatus of claim 15, further comprising
a substantially watertight seal between the case and the die.

17. (original) The apparatus of claim 16, wherein the substantially watertight seal includes an epoxy sealant.

18. (currently amended) The apparatus of claim 15, wherein the microporous medium is coupled to the die with a thermal interface material.

19. (currently amended) The apparatus of claim 15, wherein the die has a length, a width, and a height, and the microporous medium has at least substantially the same length and width.

20. (currently amended) A method comprising:

operating an integrated circuit, leading to heat being sourced from the integrated circuit; and

flowing a fluid through a microporous medium housed in a case to transfer thermal energy away from the integrated circuit heat source.

21. (original) The method of claim 20, wherein flowing of a fluid comprises flowing a selected one of air, water, and perfluorinated liquid.

22. (currently amended) The method of claim 20, wherein the microporous medium includes a microporous metal foam.

23. (currently amended) The method of claim ~~22~~20, wherein the microporous ~~metal foam~~ medium includes a plurality of pore channels with a pore diameter that is substantially at or between 50 μm – 1 mm.

24. (original) The method of claim 20, wherein said flowing of a fluid comprises operating a pump coupled to an inlet in the case to move the fluid through the case, and the method further comprises operating a heat exchanger coupled to an outlet in the case to transfer thermal energy.

25. (original) The method of claim 20, wherein said flowing of a fluid is induced at least in part by natural buoyancy resulting from heated portions of the fluid.

26. (currently amended) A system comprising:

an electronic assembly including:

a heat source with at least one integrated circuit;

a heat exchanger; and

a thermal management device having a case including a microporous medium and a fluid, to thermally couple the heat source to the heat exchanger;

a dynamic random access memory coupled to the at least one integrated circuit; and

an input/output interface coupled to the at least one integrated circuit.

27. (currently amended) The system of claim 26, wherein the microporous medium includes a microporous metal foam.

28. (currently amended) The system of claim ~~27~~26, wherein the microporous ~~metal foam~~medium includes a plurality of pore channels with a pore diameter that is substantially at or between 50 μm – 1 mm.

29. (original) The system of claim 26, wherein the integrated circuit is a microprocessor.

30. (currently amended) The system of claim 29, wherein the system is ~~a~~ selected ~~one~~ from a group consisting of a set-top box, an entertainment unit, and a digital versatile disk player.

31. (original) The system of claim 26, wherein the input/output interface comprises a networking interface.